



NYASALAND



PROTECTORATE

Report of the
DEPARTMENT
of
AGRICULTURE
For the year 1945

PART I

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POLICY

The year saw a considerable expansion in the soil conservation work of the Department. Numerous new land usage schemes were planned and started and although these are, after all, only a beginning the progress made is satisfactory. The problems before the Department are immense and complex and until the staff is considerably augmented it will be impossible to touch more than a fringe of them.

The foodcrop position gave rise to some anxiety in view of the excessive rain and lack of sun but there was sufficient maize to carry the country through. There can be no doubt that the halcyon days of plenty of cheap maize have disappeared for ever and it will need much work and propaganda to ensure that sufficient maize and other foodcrops are available to meet the needs of the Protectorate. The increasing population, the increased demand for food for labour and poor and dropping yields make the future food position of the Protectorate our first consideration. One of the Freedoms of the Atlantic Charter is Freedom from Want. It is not going to be easy to secure this Freedom for the present and future peoples of Nyasaland and it is realised that the most vital work which the Department has to undertake is to do everything possible to ensure plenty of the right kind of food for everyone in the Protectorate.

Tobacco still remains the major economic crop of the African but every effort is being made to encourage cotton production in suitable areas. The most serious, if not the only serious pest of cotton in Nyasaland is the Red Bollworm (*Diparopsis castania*, Hmps) and if this can be controlled satisfactorily the cotton industry should flourish. During the year the Entomologists of the Empire Cotton Growing Corporation—Messrs. Pearson and Mitchell, completed their investigation into the control of this pest on the Lower River. Their very comprehensive and able report has been considered by Government and recommendations contained therein are being investigated.

European agriculture showed most expansion in Tung growing. Tea is governed by the restriction scheme while flue-cured Tobacco growing showed no tendency to increase. The European fire-cured industry, largely concentrated in the Central Province, plays an important part in the general tobacco industry of the Protectorate and it is satisfactory to record that increasing attention is being paid in this area to better farming methods.

WEATHER CONDITIONS

2. Generally throughout the Protectorate the total rainfall was above normal and badly distributed over the growing season. The late and, in many places, inadequate planting rains were followed in January, February and the early part of March by a period of extremely heavy rains and little sunshine. These excessive rains caused severe flooding on the Lake and Shire plain areas, particularly detrimental to the rice crop. The Lake maintained a high level throughout the dry season preventing an appreciable acreage of valuable garden land from being cultivated. The weather adversely affected both the tobacco and maize crops but seemed to have no effect on the majority of other produce as record tea, tung, groundnut and bean crops were harvested. Although the rain stopped abruptly in March, good winter rains were recorded in the tea and wheat areas.

3. The total rainfalls for the six wet and six dry months are shown in the accompanying table :—

District		Stations		Total Rainfall Nov. 1st, 1944 to April 30th, 1945	Total Rainfall May 1st, to October 31st, 1945
PORT HERALD	...	Port Herald Expt. Station	...	42.99	3.36
		Makanga Expt. Station	...	31.81	4.30
		Tengani ...	...	34.94	3.36
		Chididi Mission	...	—	10.41
CHOLO	...	Cholo Boma	...	60.78	7.42
		Tung Expt. Station	...	50.66	5.26
		Masambanjati	...	78.53	10.45
		Makwasa	...	55.91	4.62
		Kamponji	...	47.36	8.36
		Mandimwi	...	64.04	7.79
		Tekerani Mission	...	70.76	9.39
MLANJE	...	Upper Mboma	...	76.07	7.81
		Mlanje Tea Expt. Station	...	79.89	8.97
		Lauderdale	...	91.60	3.34
		Glenorchy	...	73.02	9.43
		Likanga	...	75.97	9.29
		Lujeri	...	118.36	18.71
BLANTYRE	...	Luchenza	...	48.12	3.43
		Chileka	...	35.45	0.31
		Mwanza	...	45.86	4.51
		Lisungwe	...	27.35	1.16
		N.T.B. Limbe	...	55.33	5.39
		Blantyre Boma	...	—	1.35

ZOMBA ...	...	...	Zomba—Expt. Station	...	54.31	...	1.65
			Makwapala	...	44.41	...	0.71
LIWONDE ...	...	...	Mlomba N.T.B.	...	42.23	...	0.92
			Nyambi N.T.B.	...	42.74	...	1.65
FORT JOHNSTON ...	...	...	Fort Johnston Boma	...	25.30	...	1.05
			Jalasi Plot	...	44.96	...	0.29
NCHEU ...	...	...	Ncheu Boma	...	48.24	...	0.21
			Mlangeni	...	43.37	...	0.26
			Nkhande	...	42.81	...	0.16
DEDZA ...	...	...	Tiwi	...	43.14	...	0.59
			Dedza Boma	...	50.17	...	1.00
LILONGWE ...	...	...	Lilongwe N.T.B.	...	38.71	...	0.12
			Nathenje	...	50.83	...	0.13
			Mponela	...	37.51	...	Nil
			Nsaru	...	46.49	...	0.42
			Likuni	...	44.28	...	0.12
FORT MANNING ...	...	...	Fort Manning Boma	...	44.90	...	0.36
DOWA ...	...	...	Chitala	...	46.06	...	0.09
			Dowa Boma	...	40.92	...	0.02
			Mwera Hill	...	47.62	...	0.18
			Chinthembwe	...	51.03	...	0.29
KASUNGU ...	...	...	Kasungu Boma	...	36.10	...	0.22
KOTA KOTA ...	...	...	Kota Kota Boma	...	67.17	...	1.17
			Benga	...	48.11	...	Nil
CHINTECHE ...	...	...	Chinteché Boma	...	96.75	...	11.48
			Vizara	...	108.17	...	17.26
MZIMBA ...	...	...	Mzimba Boma	...	40.61	...	Nil
KARONGA ...	...	...	Karonga Dept. of Agriculture...	...	52.77	...	2.02
			Nchenachena	...	65.06	...	4.29
			Misuku	...	62.91	...	5.58

PRODUCTION AND EXPORT

4. During the period under survey there was a general sufficiency of foodstuffs throughout the Protectorate with the exception of certain small infertile areas to be found in most districts. In all cases the inhabitants of such areas were in a position to purchase food from their more fortunate neighbours. Mainly due to weather conditions maize production dropped and although local requirements were satisfied there was no exportable surplus. Rice, groundnuts and beans all yielded useful surpluses which found ready markets in South Africa and the Rhodesias.

5. The production and acreage of the principal crops grown by Europeans are given in the following table :—

			1944		1945	
			Acreage	Yield in lbs.	Acreage	Yield in lbs.
Tea	...	...	19,594	12,935,985	19,807	13,639,491
Tung	...	...	8,349	267,838	10,132	590,659
Tobacco	...	...	6,344	3,514,213	6,154	2,230,018
Sisal	...	...	1,196	805,249	1,280	716,800
Cotton (Lint)	...	...	112	12,448	80	17,449
Rubber	...	...	1,430	196,350	1,431	142,250
Soya Beans	...	...	2,038	1,348,260	1,927	1,423,600

6. The production and number of growers of the two principal native crops, viz. cotton and tobacco are given below :—

			No. of Growers *		Amount sold in lbs.	
			1944	1945	1944	1945
Cotton	...	...	48,474	42,788	10,818,000	10,322,000
Tobacco	...	...	93,591	89,003	19,704,000	18,352,000

* Approximate

7. The exported amounts and values of the various items of agricultural produce and raw materials were as follows :—

		1944 <i>lb.</i>		1944 £		1945 <i>lb.</i>		1945 £
Beeswax	...	9,805	...	425	...	4,465	...	279
Capsicums and Chillies	...	31,515	...	760	...	36,569	...	929
Cotton (Lint)	...	2,526,868	...	77,991	...	3,601,194	...	114,049
Cotton (Seed)	...	691,268	...	822	...	2,410,929	...	2,894
Fibre (Sisal)	...	190,926	...	1,570	...	763,475	...	7,940
Potatoes	...	281,034	...	800	...	800,887	...	2,399
Maize and Maize Flour	...	210,200	...	528	...	8,556	...	36
Rubber	...	217,263	...	10,327	...	153,740	...	8,702
Soya Beans	...	1,166,790	...	7,553	...	1,345,814	...	8,703
Strophanthus	...	18,161	...	1,816	...	4,884	...	488
Tea	...	12,482,915	...	583,638	...	13,717,261	...	685,943
Tobacco Leaf :								
dark-fired	...	8,651,616	...	414,427	...	8,823,242	...	441,211
flue-cured	...	765,426	...	36,979	...	906,627	...	45,331
air-cured	...	1,262,947	...	62,398	...	969,934	...	48,497
Tobacco Strips :								
dark-fired	...	2,626,562	...	108,094	...	4,895,160	...	203,979
flue-cured	...	846,542	...	34,324	...	636,171	...	26,918
air-cured	...	1,472,100	...	61,166	...	1,441,522	...	60,063
Tung Oil	...	89,814	...	11,628	...	153,149	...	18,935
Tung Seed	...	3,017	...	152	...	3,099	...	234
Castor Seed	...	188,189	...	784	...	92,802	...	387
Beans	...	1,836,215	...	10,988	...	7,676,376	...	56,874
Groundnuts	...	396,448	...	4,425	...	2,553,850	...	28,322
Rice	...	44,258	...	209	...	1,115,399	...	8,303
Vegetables	...	580,135	...	5,088	...	641,353	...	6,576
TOTAL	...		...	1,439,892	...		...	1,777,992

TOBACCO

8. (a) TRUST LAND FIRE CURED CROP. The number of registered growers showed a very small decline but the acreage per grower increased in the Southern Province from 0.48 acre to 0.65 acre and in the Central Province from 0.93 to 0.98. The crop was, as usual, marketed through the Native Tobacco Board. The season was generally a difficult one owing to excessive rain and lack of sun which accentuated the effect of inadequate curing accommodation and resulted in an increase in the amount of pole burn, and perished leaf. The fact that prices were lower than in the previous season caused the growers to pay less attention to quality. The Southern Division crop had less pole burn than the Northern crop and some very well handled tobacco came from Palombe area. Sales on the Auction Floor opened quietly but at the end of the season prices rose steeply, particularly for lower grades which were in demand for the continental market.

(b) TRUST LAND AIR CURED CROP. The quality was reasonably good but the leaf was on the dark side. There was a very keen demand for this crop on the Auction Floor and there appears to be room for a considerable expansion of this type of tobacco particularly if a lighter leaf can be produced.

(c) EUROPEAN FLUE CURED. The excessive rains which occurred during the harvesting of the main crop affected both quality and quantity. The acreage planted was 6,743, a slight increase on the previous season, but the yield of cured leaf per acre at 316 lbs. was lower. Prices on the floor averaged 13.65d. per lb. for export—nearly 1½d. more than in 1944.

TABLE I
PRODUCTION FIGURES

				1944 <i>lbs.</i>		1945 <i>lbs.</i>
Flue cured	...	European	...	2,219,195	...	1,930,069
		African	...	50,008	...	6,947
Fire cured	...	European	...	225,886	...	205,260
		African	...	15,833,406	...	14,908,340 *
Air cured	...	European	...	69,102	...	94,599
		African	...	3,820,346	...	3,437,564 †
TOTAL	...		...	19,703,756	...	18,352,851

* This figure includes 6,911,582 lbs. produced by Africans on European estates.

† This figure includes 2,669,007 lbs. produced by Africans on European estates.

TABLE II

		TRUST LAND CROP							
		Registered Growers				Average yield of cured Leaf per grower in lbs.			Average Return per grower
		1944	...	1945	...	1944	...	1945	...
Central Province	...	55,298	...	54,987	...	148	...	175	...
Southern Province	...	15,190	...	12,929	...	166	...	140	...
									59/11d.
									35/3d.

TABLE III

		SALES ON AUCTION FLOOR					
Type		Quantity sold in lbs.	...	Average price per lb. paid on floor	Quantity sold in lbs.	...	Average price per lb. paid on floor
		1944 lb.		1944	1945 lb.		1945
Flue Cured	...	2,300,000	...	10.64d.	...	2,132,000	...
Fire-cured	...	9,786,000	...	8.27d.	...	10,633,000	...
Air-cured	...	977,000	...	8.19d.	...	933,000	...
							12.03d.
							5.89d.
							7.41d.

COTTON

9. Although the number of growers in the whole Protectorate showed a drop of 11.5% on the 1944 figures, the total crop produced was only 4.6% less than the previous year.

The crop in the Southern Province first promised well and initially a good crop of bolls was set. In the Port Herald area the carry-over of red bollworm from the late 1944 crop seems to have been high and delayed due to the excessive early rains, the early crop of flowers and bolls providing excellent conditions for the growth and multiplication of these larvae. This resulted in a high larval infestation in May and June which suppressed flowering and boll formation until late July. The winter rains were good and a second flush of flowers developed from which a heavy late crop was harvested in September and October. In the south east Chikwawa area bollworm infestation was smaller and a high proportion of the early crop matured and was purchased in June, July and August.

A price increase of 3/16d. per pound of seed-cotton over the 1944 prices caused a great deal of satisfaction and resulted in an increased acreage in the Province.

In the Central Province cotton production during the period under review continued the steady decline begun in 1938 which was due mainly, but not entirely, to dissatisfaction with the prices offered. The guaranteed minimum price of one and nine sixteenths pence per lb. of seed cotton for the 1946 crop has, however, definitely stimulated interest hitherto lacking and the number of growers has been trebled.

Cotton growing in the Karonga District of the Northern Province was sustained, mainly due to the fact that the people are more interested and dependent upon agriculture than elsewhere in the Protectorate. As in the south, the crop showed excellent promise in the early stages and with larger acreages a high yield of good quality cotton was picked.

Details of Trust Land and Private Estate seed cotton production, in lbs. were as follows :—

Southern Province			Central Province		
Port Herald	...	2,490,000	Ncheu	...	10,000
Chikwawa	...	5,674,000	Dedza	...	190,000
Cholo	...	302,000	Dowa	...	16,000
Blantyre and Neno	...	518,000	Kota Kota	...	24,000
Liwonde	...	160,000	Northern Province		
Fort Johnston	...	100,000	Karonga	...	838,000
		9,244,000			1,078,000

Of the total of 10,322,000 lbs. 1,374,000 lbs. were produced by native tenants on private estates. Comparative figures for 1944 were 10,818,000 and 1,608,000 lbs. respectively. The European production of seed cotton amounted to 58,000 lbs. as compared to 38,000 in 1944.

TEA

10. This was one of the most successful seasons in the whole history of the industry although the vagaries of the weather made estate labour planning difficult. The rains began in the first week in November, increasing in intensity as the season progressed and, as the rainy periods were interspersed with hot sunny weather, ideal growing conditions produced record flushes of tea. Prolonged heavy rain and low temperatures in January retarded growth but good rains and rising temperatures in February and March resulted in more record yields being plucked. Although the rains stopped abruptly in April the tea continued to look well until late June. From July to November odd showers of rain kept the gardens fresh but low night temperatures in the early period, followed by hot sunny days in October and November, retarded growth. Production rose from 12,935,985 lb. to 13,639,491 lb. of made tea in the year under review, an increase of 5.4 per cent.

A small percentage of the new allocation of 4,040 acres, made by the International Tea Committee in 1944, was planted up by the end of the year. The total area allocated to Nyasaland is now 24,240 acres.

The labour position in both tea areas was generally satisfactory although the usual seasonal shortages were experienced. Continued progress is being made in the improvement of the housing, sanitation, health and recreation of the labour. The issue of free midday meals, now general in the tea areas, has done a great deal to encourage the labourers to work harder and more efficiently and, as the opportunity was taken to reinforce this meal with foods of special nutritive value, such as vitamin concentrates and minerals lacking in the normal diet, a real advance was made by the industry in the improvement of the general health of the labour.

TUNG

11. Weather conditions were generally favourable and the 1945 crop showed an increase of about 80% over 1944. A total of 590,659 lb. of nuts was received at the factory from which 195,632 lb. of oil were extracted and sold in South Africa and Australia at a price of £249 per ton f.o.b. Beira, giving a gross return to growers of 7.21 pence per lb. of nuts.

The total area under the crop in 1945 reached 10,132 acres, an increase of 1,943 acres or 23 per cent on the previous year.

Following a thorough investigation of tung growing in the Central and Northern Provinces, conducted by the Agricultural Officer (Tung) in 1944, it was decided to investigate the possibilities of developing parts of the Vipya Plateau for tung growing. A site was selected at the north-eastern corner of the Kaningina Forest Reserve for preliminary planting trials. During the later part of December four plots were banded, cleared and holed and the 300 seedlings in baskets, sent 500 miles by road from Cholo, arrived in excellent condition for planting. For comparison 100 budded stumps of various selected clones were planted later.

MINOR CROPS

Wheat.

12. Planting conditions were ideal and, although the late rains delayed sowing in the Central Province, a record crop was harvested. The late planting accentuated the difficulty of harvesting the gardens, which were larger than last year, before the rains broke.

The efforts to encourage the local production of wheat were most successful as the total crop purchased amounted to 606 tons, which represents an increase of 62% on the previous record crop of 1944. 542 tons of this total were grown in the Kirk Range. Production in the Protectorate has increased to such an extent that for the moment self-sufficiency has been achieved. There is however, still a need for improving quality and this is being investigated by the trial of introduced varieties.

Rice.

13. The heavy rains, by causing excessive flooding, adversely affected the rice crop in the main producing areas. In addition, the shortage of cassava in Kota Kota resulted in a large proportion of the rice being retained by the growers for domestic consumption. Only 831 tons of paddy was offered for sale in the Central and Northern Provinces, a decrease of 41% on the 1944 production. The tonnage in the Southern Province rose by 64% mainly due to the opening of new markets in the Lake Shilwa area; the Lower River production fell as the result of the heavy flooding of the Shire River. A total of 1,352 tons of paddy passed through the markets and a further 272 tons of clean rice, the latter mainly in the Mlanje District. In addition appreciable quantities of rice, hand-hulled by the growers, was sold locally.

The guaranteed price of 3/4d. lb. paddy was considered satisfactory by the growers and an average price of 1½d. per lb. was paid for hand-hulled rice.

European Potatoes.

14. The 1945 crop of 489 tons fell by 27% from the 1944 peak of 648 tons. The success of this small native industry depends on export, mainly to Portuguese East Africa, and it is essential in order to maintain and increase the foot-hold already obtained in this market, that the produce must be placed on the market in a satisfactory condition. Keen competition for the crop in 1944 led to the marketing of immature, badly graded tubers and it was consequently found necessary to introduce grading legislation this year.

For the first time consignments of potatoes were placed on the Belgian Congo market and appeared to have found a ready demand.

Maize.

15. Considering the adverse weather conditions in the growing season the crop was satisfactory. Over 7,500 tons of surplus maize were purchased from local growers for consumption within the Protectorate, approximately half being purchased in Mlanje district. This was a decrease of 10% on 1944. In the Northern and Central Provinces and the northern section of the Southern Province the majority of the purchases were made at 4 lb. per 1d., but it became necessary to increase the price to 3 lb. a 1d. towards the end of the season. In the remainder of the Southern Province the price paid was 3 lb. a penny rising to 2 lb. a penny later in the year.

Groundnuts.

16. As a result of the high price, due to growing competition and steady demand, an increased acreage was planted. The weather was not unfavourable and the crop remained remarkably free from rosette disease. 2,342 tons of shelled nuts were sold, representing a 400% increase above the previous record crop of 1944. Of this total 1,276 tons were exported to Northern and Southern Rhodesia and South Africa. In addition to increased acreages, improved cultural practices, such as closer spacing and earlier planting, contributed to the success of the last season.

A minimum price of 1½d. per lb. has been guaranteed for the new crop which is to be bought by Government on behalf of the Ministry of Food in the United Kingdom.

Pulses.

17. There was a spectacular increase in the production of pulses throughout the Protectorate. Generally the season was favourable and keen competition to supply the Rhodesian and South African markets led to high prices. A total of 3,713 tons was purchased in the Native Produce Markets, an increase of 44% over the 1944 figures. Once again damage was done by the beetle (*Ootheca mutabilis*, Sahlb.) in the Southern Province, but the high yields of winter beans compensated for this loss. A very large surplus was also produced by natives on European estates.

The pulse crops, which are grown either under maize, (where they provide extra cover between the widely spaced plants) or planted as catch crops after tobacco and winter maize, (where they help to protect the bare soil from the sun) are a real asset to the present African agricultural framework and every effort is being made to encourage their cultivation.

Pyrethrum.

18. The cultivation of pyrethrum on the Nyika Plateau had a very disappointing year, due mainly to the fact that the local African finds the 4,000 feet climb into the cold and rain, even with the inducement of blankets, shelter and tea, too arduous and unpleasant to make the ascent sufficiently often during the year to plant, weed and harvest his crop efficiently. A slightly increased acreage was planted in the rains, bringing the total to 30 acres, cultivated by 75 African growers; the crop increased to 3,400 lb. of dried flowers. The producer receives a 1d. per lb. of wet flowers, a reasonable price under the circumstances.

Trial plots in other parts of the Protectorate showed that pyrethrum could be successfully grown in the Misuku Hills and the Kirk Range.

Castor Seed.

19. The sales of this commodity fell from 89 to 52 tons. The crop is collected from volunteer plants, and finds a ready market at ½d. a lb.

Coffee.

20. Africans in the vicinity of Nchena-chena and in the Misuku Hills continued to grow coffee on a small scale and every encouragement was given to the expansion of this industry by the issue of well grown seedlings. Total sales increased from 5 to 5½ tons at a price of 7d. per lb. for Grade 1 and 5d. for Grade 2.

PESTS AND DISEASES

Insect Pests.

21. CROP PESTS. There was no serious attack by insects on any crop during the year, but a few sporadic outbreaks of minor pests occurred.

Late in 1944, cassava in the Usisya area of the Chinteché district was completely defoliated by the grasshopper, *Zonocerus elegans*, Thunb.

Citrus grown from seed in the Namwera area of the Fort Johnston district was heavily attacked by the scale insect *Pseudonidia trilobitiformis*, Green., although budded stock in the vicinity was more or less free.

A small, black Galerucid beetle (not yet identified) was reported as attacking Groundnuts, in enormous numbers, more or less simultaneously from three widely separated areas. The first report was received in December 1944 from the Makwapala Agricultural Training Centre, where it was reputed to be serious and spreading, and to be found in other gardens in the vicinity. In January 1945, small patches of the insect were reported from the Nankumba area of the Fort Johnston district and near Mponela in Dowa district, but in neither of these cases was any further spread noticed. The insect could not be traced in any other area, and in actual fact soon disappeared from the places where it had been found.

The Tobacco Beetle (*Lasioderma serricorne*, F.) position in regard to locally manufactured and imported cigarettes improved greatly, and few complaints were received of the insect being found in cigarette packs.

In April, the very interesting record was received from an estate in the Lilongwe district of a Crambid caterpillar destroying air-cured tobacco in grass-thatched curing sheds. It was apparent that the caterpillars had been present on the new grass used in the construction of the curing sheds, and migrated therefrom onto the curing tobacco to which considerable damage was done. The same phenomenon had been observed in May 1944, under similar conditions, in the Balaka area of the Ncheu district, but the problem was not then elucidated as none of the caterpillars forwarded could be bred to the adult stage.

Scale Insects of several kinds continue to be sporadic on Tung. Some very young forms of the Mealy Bug, *Pseudococcus perniciosus* W and N., were recorded from an estate near Limbe, and it is quite apparent that a continual watch for this pest is essential, in order that immediate action may be taken.

A Tung nursery in the Zomba district was rather heavily attacked by caterpillars of the Tussock Moth, *Orgyia mixta*, Snell., in December. This was not discovered until the damage was done and pupation about to take place. The cocoon masses were removed to avoid the possibility of any second brood developing.

It seems possible that Ostico tree banding material may be applied direct to the stems of young Tung trees without causing any ill effects. The method may be of assistance in preventing attack by Termites, but it should be employed with circumspection.

LOCUSTS. There was no locust activity of any kind in the Protectorate during the 1944-45 season. There is no doubt that the anti-locust campaign conducted by the International Red Locust Control Service in the outbreak centres of *Nomadacris septemfasciata*, Serv., in the Lake Rukwa area, prevented a re-invasion of the country by this locust.

GENERAL. In November 1945, and during the next two or three months large, loose flights of the long-horned grasshopper *Homorocoryphus vicinus*, Walk., (Vern: *noni* or *nanuni*), were prevalent over large stretches of the Protectorate. They were reported from the Chikwawa, Cholo, and Blantyre districts in the Southern Province, and also from Mponela and the eastern Vipya plateau in the north. Damage to young maize and other cereals was only recorded from Cholo. Similar flights had only been observed previously in the Port Herald district in April 1929. Natives collect them for food but the loose formation of the swarms is not conducive to any great reduction in their numbers by this method.

A patchy outbreak of Army Worm, *Laphygma eximpta*, Walk., occurred in the Southern Province from March-May, the caterpillars being reported from Mlanje, Mikalongwe, Cholo, Blantyre and Zomba. The attack was confined to grasses and did not reach any cereal crops. In Zomba, at any rate, disease appeared early, together with some parasitism by *Euplectrus laphygmae*, Ferr., and from mid-April onwards parasitism by *Apanteles maculitarsus*, Cam., was of a high order. This is the fourth year in succession that such an outbreak has been recorded.

PUBLICATIONS. The following articles, prepared by the Entomologist, were published in the Nyasaland Agricultural Quarterly Journal, during the year:—

- (1) Bagworms on Tea (illustrated). Vol. 5. No. 1. Jan.
- (2) Notes on Plant Virus Diseases with particular reference to Tobacco. Vol. 5. No. 4. Oct.
- (3) A Caterpillar eating air-cured Tobacco. Vol. 5. No. 4. Oct.

THE WORK OF THE DEPARTMENT

Staff.

22. The staff of the Department was up to establishment throughout the year but it was still too small to achieve anything like the progress necessary for the Protectorate's welfare. The Northern Province was without an Agricultural Officer and only two were available for the Central Province. The shortage may become still more acute before the additional staff contemplated in the Post War Development Plan arrives.

One new Agricultural Officer was appointed during the year.

A successful Departmental Conference was held at Zomba in August.

The Director was appointed leader of a Tobacco delegation to the United Kingdom and the West Coast of Africa which left the Protectorate at the end of August returning in the middle of November. During his absence Mr. Garnett acted as Director and Mr. Lawrence as Deputy.

The services of the Entomologist were fully occupied during the year as Secretary to the Forest and Game Reserves Commission, and as Secretary to the newly-formed Standing Tsetse and Trypanosomiasis Committee which was appointed in May.

Makwapala Training School.

23. Of the candidates who entered the school in October 1943 fifteen were successful in the final examination and were appointed as Grade III. Agricultural Instructors on probation. The number of qualified Makwapala-trained Agricultural Instructors now in the Department is forty-six.

The 1944 group of students, twenty in number, all passed their mid-training examination at the end of the first year.

The 1945 candidates, who entered the Probationary Course in October, consisted entirely of ungraded Government and Native Authority Agricultural Instructors and African Soil Conservation Assistants, who had served a number of years and had shown themselves worthy of trial for promotion to the permanent staff.

A special short refresher course was instituted this year for Agricultural Instructors whose deficiency in primary education precluded them from the full 2 year course. These instructors, 15 in number, attended the Rural Science course with the 1945 Probationers and, in addition, received special tuition in soil conservation work, compost making and mensuration.

Greater stress has been laid this year on the more informal methods of instruction introduced for the first time in 1944. The following extract from report by Mr. C. J. Dawkins, Agricultural Officer in charge of Makwapala bearing on these innovations is of interest:

"The informal method of instruction referred to as 'make-believe meetings held by Agricultural Instructors with Chiefs and Villagers' has been developed during the year and now a weekly feature is made of this type of training. Other forms of it are:—(a) lectures by a Head Native Agricultural Instructor to his junior Native Agricultural Instructors as might be given on pay day; four students are primed as Head Native Agricultural Instructors by the Agricultural Officer as to the subject and headings of the day's lesson, and the remaining students are the "junior Native Agricultural Instructors" who ask the difficult questions. (b) Debates on real or hypothetical subject in which two pairs of students put the two points of view and a vote is taken after discussion by the house. (c) Individual lectures by students on any subject of their own choosing followed as usual by questions and answers. Examples of such lectures which have been given are "Methods of Collecting and Preparing Wild Rubber"; "A Better Method of Making Cassava Cubes"; "Bean Growing in North Mzimba"; "Budding of Citrus"; etc. (d) Riddles, their invention and elucidation. The asking of riddles is a popular pastime among Nyasaland Africans, especially among the children, and much wisdom is contained in them; and so an effort has been made to extend the wisdom in agricultural directions, and sufficient interest was evinced to encourage continuation of the effort. (e) Play Acting. This method, suggested at the Conference of Southern Province Agricultural Officers in October, has proved very successful and popular, and the dramatic skill displayed by students playing their parts in the Agricultural moral-plays (of their own invention and production) has been remarkable.

In all these informal methods of training the Agricultural Officer is present only as an onlooker and takes no part until the end when he sums up, corrects "howlers" and points the salient morals or lessons. They are all therefore primarily intended as training in self reliance, public speaking, presence of mind, and tact, as well as in some cases direct practice in methods of teaching and propaganda which they may afterwards be called upon to perform or to organise.

A few opportunities have occurred for the application of some of these methods upon real material, notably upon the Jeanes School Community Workers and School supervisors, both home and away, and upon neighbouring villagers when meetings have been called either here or in an actual village. No further opportunity of such practical training will be missed since it has provided a very great stimulus."

Marketing of Crops.

24. This has been one of the best years ever experienced in the Protectorate as to the tonnage and variety of food crops offered for sale. More than 13,500 tons of foodstuffs passed through the Produce Markets, an increase of 22% on the figures for 1944. An additional six permanent brick markets were constructed during the year and bricks were burnt for a further five markets. The heavy wear on district roads, the difficulty of obtaining lorry tyres and spares and the deficiency of railway rolling stock retarded the removal of produce from the markets and its export from the country.

Native Agricultural Shows.

25. Fifteen Agricultural Shows were held in the Southern Province this year, four more than last year. More than 47,200 people attended the Shows entering 22,414 exhibits—an increase of 117% over the total entry in 1944. There was also a definite improvement in the quality of the exhibits and the increase in the number of exhibits in the stock and handicraft sections was particularly gratifying. 91 village schools of all denominations entered teams in the school competitions, which yearly increase in popularity.

Demonstration.

26. Three types of demonstrational gardens are in use, mainly in the Southern Province. The most numerous is the small demonstrational plot of which 370 were established in the 1944/45 season. These are small plots about 1/25 to 1/100 acre in size established in interested African cultivators' gardens to demonstrate in each case one specific improved agricultural method, *e.g.* box ridging, application of manure, etc. The more outstanding are labelled and have already shown that they appeal to the African cultivator. It is evident that these are likely to become one of the most efficient ways of popularising new agricultural methods. A large number of these plots were established for the first time in the Central and Northern Provinces at the end of the year.

A modified small demonstration plot is used to show the potentialities of specific crops, such as rice and cassava. Such plots have proved themselves successful and are being multiplied in the Kasungu, Mzimba and Fort Manning districts.

The second type is the large demonstration plot, of which there are 15 mainly in the Southern Province. The object of these plots is to give the African a practical demonstration of improved agricultural methods by which the fertility of the land can be maintained under continuous cultivation. Simple mechanical soil conservation methods are used such as contour box-ridges and bunding; compost is made and applied and a rotation is adhered to, including fallow periods under legumes and grass. Correct crop spacing and cultivation is demonstrated and improved simple grain storage methods are used to keep seed free from attack by insects and vermin.

African cultivators are encouraged to pay periodic visits to the plots. Following some years of trial in different parts of the Protectorate it is felt that these plots have yielded few if any beneficial results, mainly for the reason that the fruit of paid Government effort made little appeal to the peasant cultivator. Consequently they are being changed into the type of demonstration called the small holding or Native Authority farm.

A small holding consists of up to 12 acres, depending on the fertility of the area, and is designed to produce a good standard of living for an African family for an indefinite period. It is laid out to contain a house, out-buildings, garden, an orchard and woodland area in addition to arable land, and will include in the future the keeping of stock (sheep, goats, poultry and a cow or two). Nothing is

demonstrated on these holdings which cannot be undertaken by a hard-working family. So far 11 holdings have been established in the Southern Province and they take the form of Native Authority "home farms" under the control of the Chief, who pays for them and sometimes runs them by installing an African and his family. On these holdings the whole range of agricultural policy is demonstrated and the farm is used for periodical meetings to enlighten the village and group headman who live in the Native Authority area. They are popular and are already, with interested Chiefs, playing an important role in the agricultural extension work in the Protectorate.

Soil Conservation.

27. Steady and gratifying progress in areas with adequate European staff continued to be made during the year in pursuance of the policy of substituting contour and box ridging for the indigenous system of flat and mound planting. In areas with slopes of less than 1 in 8 such a system tends to stabilise permanently the soil but in steeper areas it is only regarded as an interim measure.

Bearing in mind the size of the task and the ever increasing strain on the land with increasing population, greater progress has been made than might appear at first sight. The majority of gardens in the Zomba, Mlanje, Chiradzulu, Cholo, Blantyre, Ncheu, Dedza and Lilongwe districts and most of the Kota Kota and Dowa hill areas are now ridged (approximately on the contour). This means that the preliminary steps have already been taken to conserve the soil in the most populous districts in the Protectorate. In addition to these mechanical checks to soil erosion, measures such as composting, strip cropping, and rotation of crops are being advocated.

Where adequate European staff is available additional intensive soil conservation work is being undertaken to protect mainly steeper areas where contour ridging alone is inadequate, or to resuscitate badly eroded or threatened areas. The following are the more important land usage or special areas in which intensive work is being undertaken:—

(a) LIVULEZI, NCHEU DISTRICT.

This densely settled and over-grazed area of 69 square miles has received special attention and it is gratifying to record that the inhabitants have been ready to co-operate, except in the matter of the reduction of stock. The majority in the past year relined their ridges on the contour, nine more badly needed village woodland areas demarcated and 200 acres, used by 41 villages, were surveyed and set aside for grazing land, with the consent of the people. Benefits are already accruing from fencing and bunding and restricting the period of grazing.

(b) DZENZA, DEDZA DISTRICT.

Progress has been disappointing in this area owing to the failure of the majority of inhabitants to co-operate, after at least 6 years of preliminary propaganda. Most of the garden land is on steep slopes and in certain parts, due to a high population density, little room is left for resting land. If people are to live permanently in the area, each piece of land will need to be allocated to its best use and to be farmed in a conservative manner. Already, except in specially favourable seasons, the inhabitants have to seek food outside the area and the deterioration is such in certain gardens that even if improved agricultural systems were now to be adopted, the restoration of fertility would take an appreciable number of years. This inevitably means that such impoverished areas as this will soon only be capable of supporting a fraction of the present population.

(c) DOWA ESCARPMENT, DOWA DISTRICT.

This is one of the most backward areas in the Central Province but is one in which appreciable progress has been made. More than half the gardens were contour ridged in an area of 22 villages.

(d) MPHANDA HILL, LILONGWE DISTRICT.

Patient persistence in attempting to obtain the co-operation of the inhabitants of this land usage area began, near the end of the year, to achieve results and a beginning has been made with the better layout of the land, box contour ridging and the check-damming of gullies and garden boundaries.

(e) MISUKU HILL, NORTH NYASA DISTRICT.

This scheme, which has already received much publicity, continued to be successful although the new conservation practices which have not yet become sufficiently habitual, were not continued so efficiently under less intensive supervision.

(f) CHIKWAWA ESCARPMENT, CHIKWAWA.

This is a steep badly eroded area on the escarpment along the eastern boundary of the district which has been under supervision for two years. By the end of the year most crops were being planted on contour ridges and box-ridging had begun to be adopted.

(g) CHINYENYEDI VALLEY, CHOLO DISTRICT.

This area was selected in 1941 as an experimental area typical of the rest of lower Cholo in which to investigate land usage problems and to find solutions of these problems which would be applicable to the rest of the district.

The plan of campaign was as follows:—

- (1) The demarcation and closure of all land with a slope greater than 1 in. $3\frac{1}{2}$.
- (2) The contour bunding of all unclosed land.
- (3) The distribution of all unclosed land by the village headmen.
- (4) The introduction of contour ridge planting, box-ridging, protection of storm and water drains, crop rotation and composting of refuse.

(h) MALAWE TENGANI/BORDER SIDING AREA, PORT HERALD DISTRICT.

This is the largest land usage project in operation in the Protectorate, for which financial assistance is provided from the Colonial Development and Welfare Act Fund. Already 22 miles of storm drains have been dug and consolidated and a comprehensive land usage plan for the whole area is now in operation. Staff shortage and the general apathy of the inhabitants curtailed operations in 1945 but all previous work was maintained and further progress was made during the year.

(i) NAMANGALE/MACHEMBA/CHOLE, MLANJE DISTRICT.

The area of this land usage scheme is about 39 square miles of densely populated country, the greater part of which is badly eroded or is threatened with erosion. Efforts are therefore being made to protect the threatened, and resuscitate the already badly eroded areas. The population in certain sections is progressive and under enlightened village headmen readily co-operate, making the task comparatively easy; box ridging, the grassing and check damming of garden boundaries, gullies etc., the protection of stream banks, and the introduction of improved cultural practices are widespread. In other sections the constant opposition of the population has hindered progress but nevertheless definite improvements have been made. More than 15 miles of storm drains have been dug and consolidated and 410 stone check dams constructed.

In addition to the projects enumerated above many other land usage schemes are in operation, such as the Domasi Valley (Zomba) Nikuwa and Namkupu (Fort Johnston), Chipolopolo (Port Herald) Somba and Kumtaja (Blantyre), Ndunde (Chiradzulu), etc. Apart from these intensive areas, extensive teaching and demonstration in the primary methods of soil conservation is being done throughout the Protectorate.

Europeans on alienated land are becoming increasingly aware of the danger of soil erosion and over cultivation and it is gratifying to record that they are co-operating readily with the Department in an attempt to check soil deterioration and loss from these areas.

Experimental Stations and Seed Farms.

28. The shortage of trained staff curtailed the experimental programme but nevertheless an appreciable volume of work was successfully completed, and is fully recorded in Part II of this Report. Full scale experiments were carried out at Chisawanu, Cholo District, (tung), Mlanje (tea), Nkwale, Dowa District, (cotton), Port Herald (food crops and cotton), Makanga, Port Herald District, (Cotton), Likuni, Lilongwe District, (tobacco and food crops) and observational work and seed production was undertaken at Namalenga, Mlanje District, (tobacco and food crops), Zomba (tobacco and food crops), Nchenachena, Mzimba District, (coffee), Mwera Hill, Dowa District, (vegetables and fruit trees) and Masambanjati, Cholo District, (pineapples). In addition, all the main experimental stations produced seed, plants and trees of various types for sale and distribution to European and African applicants.

Summary of Legislative Changes.

29. (a) The Tea (Amendment) Ordinance, 1945, provides for the addition of certain countries to which non-quota tea may be exported.

(b) The Cotton (Amendment) Rules, 1944, provide that any profits made by Government from the marketing of cotton on Native Trust Land shall be credited to the Native Development and Welfare Fund.

(c) Government Notice No. 9 of 1945 specifies paddy and rice as products, the purchase and sale of which in the Kota Kota and Chinteché Districts shall be controlled and regulated under the Marketing of Native Produce Ordinance.

(d) Government Notices Nos. 74 and 75 of 1945 extend the operation of the Marketing of Native Produce Ordinance.

(e) Government Notice No. 44 of 1945 amends the Schedules to the Plant Pests and Diseases Ordinance by the addition of Tomato Seeds to the First Schedule and by the addition of Bacterial blight of tomatoes to the Second.

(f) Government Notices Nos. 17, 40 and 99 of 1945 relate to changes in the membership of the Native Tobacco Board.

Acknowledgments.

I am happy to have this opportunity to record my gratitude to the numerous unofficials who come into close contact with the Department, for their sympathy and willing co-operation.

The Administration and other Departments have always been ready to assist the work of the Agricultural staff and the spirit of co-operation which generally exists is most encouraging.

Finally I wish to pay tribute to the continued loyalty, energy and enthusiasm of the Field and Specialist staff of the Department.

ZOMBA

G. W. NYE
Director of Agriculture

EUROPEAN AGRICULTURE, 1945

NAME OF DISTRICT	SISAL		COTTON		RUBBER		CHILLIES AND CAPSICUMS		MAIZE		WHEAT	
	Acres under crop	Yield lb.	Acres under crop	Yield lb. (Lint)	Acres under crop	Yield lb.	Acres under crop	Yield lb.	Acres under crop	Yield lb.	Acres under crop	Yield lb.
Port Herald	—	—	29	7,813	—	—	—	—	35	43,770	—	—
Chikwawa	—	—	—	—	—	—	—	—	—	—	—	—
Neno	—	—	—	—	—	—	—	—	10	9,000	—	—
Cholo	1,277	716,800	—	—	—	—	3	653	261	220,331	31	16,299
Mlanje	—	—	—	—	1	200	5	400	118	137,966	12	7,201
Blantyre	—	—	—	—	—	—	2	155	139	79,065	4	799
Chiradzulu	—	—	—	—	—	—	—	—	27	7,600	—	—
Zomba	—	—	6	190	—	—	106	45,708	353	326,420	2	546
Liwonde	—	—	5	230	—	—	—	—	130	92,400	—	—
Fort Johnston	—	—	—	—	—	—	33	8,790	135	189,300	—	—
Ncheu	—	—	—	—	—	—	—	—	68	74,320	—	—
Dedza	—	—	—	—	—	—	—	—	23	25,400	7	3,500
Fort Manning	—	—	—	—	—	—	—	—	100	14,000	—	—
Lilongwe	—	—	—	—	—	—	—	—	481	572,700	4	1,800
Dowa	—	—	40	9,216	—	—	—	—	100	27,025	—	—
Kota Kota	—	—	—	—	—	—	—	—	—	—	—	—
Kasungu	—	—	—	—	—	—	—	—	—	—	—	—
Mzimba	—	—	—	—	—	—	—	—	12	4,630	1	500
Chintechi	—	—	—	—	—	—	—	—	15	13,250	—	—
Karonga	—	—	—	—	—	—	—	—	7	5,900	6	950
TOTAL	1,280	716,800	80	17,449	1,431	142,250	149	55,706	2,014	1,843,077	67	31,595
1944	1,196	805,249	112	12,448	1,430	196,350	19	1,350	2,839	2,709,974	150	59,621

Note :—Sisal :—Acreage harvested in 1945 was 640 compared with 821 in 1944
Rubber : Acreage tapped in 1945 was 1,431 compared with 1,430 in 1944

EUROPEAN AGRICULTURE, 1945

NAME OF DISTRICT	LEGUMES					OIL SEEDS				
	Total		For food		For green manuring	Total		For crushing		For food
	Acres under crop	Yield lb.	Acres under crop	Yield lb.	Acres under crop	Yield lb.	Acres under crop	Yield lb.	Acres under crop	Yield lb.
Port Herald	5	1,577	5	1,577	—	3,104	4	722	3	2,382
Chikwawa	—	—	—	—	—	—	—	—	—	—
Neno	160	11,600	124	11,600	36	2,226	5	—	5	2,226
Cholo	294	41,034	124	41,034	170	1,414,848	2,019	1,376,548	82	28,300
Mlanje	257	26,861	107	26,861	150	7,321	16	—	16	7,321
Blantyre	374	57,100	149	55,900	221	1,200	31	20,468	6	2,100
Chiradzulu	121	27,003	93	24,403	13	3,210	17	3,080	5	130
Zomba	682	147,295	357	123,695	209	64,551	107	27,495	62	37,056
Liwonde	6	2,400	5	2,400	1	3,592	25	2,142	5	1,450
Fort Johnston	175	15,213	75	13,713	90	20,060	43	—	43	20,060
Ncheu	130	16,000	45	16,000	85	4,000	8	4,000	—	—
Dedza	30	20,000	23	20,000	7	1,200	6	—	6	1,200
Fort Manning	28	600	3	600	25	2,300	4	200	3	2,100
Lilongwe	1,674	37,600	144	37,600	1,510	5,840	13	—	13	5,840
Dowa	7	—	—	—	7	48,821	38	—	38	48,821
Kota Kota	—	—	—	—	—	—	—	—	—	—
Kasungu	—	—	—	—	—	1,000	2	—	2	1,000
Mzimba	—	—	—	—	—	600	2	—	2	600
Chintche	4	500	4	500	—	200	2	—	2	200
Karonga	4	400	4	400	—	—	—	—	—	—
Total ...	3,951	405,183	1,262	376,283	2,524	1,605,441	2,342	1,444,655	293	160,786
1944 ...	2,641	387,177	1,003	349,471	1,425	1,629,948	2,473	1,466,468	224	163,480

EUROPEAN AGRICULTURE, 1945.

NAME OF DISTRICT	Total acreage under culti- vation Acres	TOBACCO						TEA		COFFEE	
		Fire-cured			Flue-cured			Acres under crop	Yield lb.	Acres under crop	Yield lb.
		Acres under crop	Yield lb.	Acres under crop	Yield lb.	Acres under crop	Yield lb.				
Port Herald	110	—	—	—	—	—	—	—	—	—	—
Chikwawa	25	—	—	—	—	—	—	—	—	—	—
Neno	633	228	73,197	—	228	73,197	—	—	—	—	—
Cholo	22,447	1,250	491,821	—	1,240	485,703	—	—	—	—	—
Manje	10,898	96	30,353	8	4,478	25,875	10	6,118	10,016	62	262
Blantyre	1,974	1,061	385,750	—	—	385,750	—	—	9,791	20	1,000
Chiradzulu	641	254	86,042	150	52,874	33,168	—	—	—	—	—
Zomba	3,410	560	212,825	135	42,615	170,210	—	—	—	—	—
Liwonde	175	—	—	—	—	—	—	—	—	—	—
Fort Johnston	2,204	1,718	604,366	—	1,718	604,366	—	—	—	—	—
Ncheu	588	380	97,402	—	240	57,911	140	39,491	—	—	—
Dedza	279	173	98,910	45	30,000	68,910	—	—	—	—	—
Fort Manning	226	60	9,645	—	—	—	60	9,645	—	—	—
Lilongwe	2,501	409	123,007	145	75,383	24,979	84	22,645	—	—	—
Dowa	248	42	10,622	—	—	—	42	10,622	—	—	—
Kota Kota	1	—	—	—	—	—	—	—	—	—	—
Kasungu	29	23	6,078	—	—	—	23	6,078	—	—	—
Mzimba	165	—	—	—	—	—	—	—	—	—	—
Chintche	1,451	—	—	—	—	—	—	—	—	—	—
Karonga	29	—	—	—	—	—	—	—	—	6	200
Total	48,034	6,154	2,230,018	483	205,260	1,930,069	5,312	94,599	19,807	88	1,462
1944	45,723	6,344	2,514,183	756	225,886	2,219,195	5,379	69,102	19,594	60	4,150

NOTE :—Tea : Acreage in plucking in 1945 was 18,918 compared with 18,416 in 1944.
Coffee : Acreage in bearing in 1945 was 25 compared with 27 in 1944.

EUROPEAN AGRICULTURE, 1945

NAME OF DISTRICT	TUNG OIL		RICE		FRUIT TREES	WOODLAND ARTIFICIALLY ESTABLISHED
	Acres under crop	Yield lb.	Acres under crop	Yield lb.	Acres under crop	Acres
Port Herald	—	—	32	43,050	5	26
Chikwawa	—	—	—	—	15	8
Neno	210	900	—	—	20	75
Cholo	7,116	502,857	6	4,400	112	5,514
Mlanje	429	25,570	8	7,804	139	4,252
Blantyre	207	4,246	10	1,076	26	3,934
Chiradzulu	219	1,920	—	—	3	1,260
Zomba	1,578	54,831	—	—	7	1,936
Liwonde	1	—	—	—	8	95
Fort Johnston	95	—	—	—	5	576
Ncheu	—	—	—	—	2	195
Dedza	—	—	—	—	40	199
Fort Manning	21	—	—	—	13	244
Lilongwe	?	215	—	—	—	5
Dowa	—	—	—	—	2	407
Kota Kota	—	—	—	—	1	44
Kasungu	—	—	—	—	4	67
Mzimba	150	—	—	—	—	6
Chintechu	—	—	—	—	—	—
Karonga	6	120	—	—	—	—
TOTAL	10,132	590,659	56	56,330	402	18,843
1944	8,349	267,838			393	21,871

Tung Trees : Acreage harvested in 1945 was 4,912 compared with 3,987 in 1944.

LIVESTOCK OWNED BY EUROPEANS AT 31st DECEMBER, 1945

District	Bulls	Oxen	Cows and Heifers	Calves	Pedigree Cattle	Horses	Mules	Donkeys	Sheep	Goats	Pigs
Port Herald	6	120	371	123	—	—	—	1	107	134	48
Chikwawa	10	42	368	129	—	—	—	2	—	—	16
Neno	6	18	65	26	—	—	—	2	18	20	151
Cholo	56	1,057	1,585	708	6	33	1	4	301	82	20
Mlanje	33	907	1,240	503	5	2	—	7	65	94	68
Blantyre	20	287	775	321	43	18	—	8	27	73	125
Chiradzulu	6	157	391	200	29	—	—	—	24	—	—
Zomba	22	547	1,187	503	20	15	—	16	143	30	58
Liwonde	—	—	—	—	—	—	—	7	59	—	—
Fort Johnston	2	12	134	45	—	—	—	—	54	180	—
Ncheu	5	27	45	19	—	—	—	1	20	48	11
Dedza	4	40	84	24	—	—	—	1	—	—	31
Fort Manning	6	105	99	52	—	—	—	—	13	5	71
Lilongwe	15	193	265	131	8	3	—	31	160	2	149
Lilongwe	2	16	8	5	—	—	—	—	—	—	—
Dowa	1	12	18	11	1	—	—	—	8	—	—
Kota Kota	—	—	—	—	—	—	—	—	—	—	4
Kasungu	2	39	4	—	—	—	—	—	5	—	37
Mzimba	1	6	20	11	—	—	—	—	14	—	9
Chintechi	—	—	—	—	—	—	—	—	—	—	—
Karonga	2	36	49	22	—	—	—	—	19	7	18
Total	199	3,621	6,708	2,833	112	71	1	80	1,037	675	815
1944	194	3,762	6,836	2,980	109	45	1	55	1,097	433	1,023

NATIVE AGRICULTURE, 1945

DISTRICT			AMOUNT IN SHORT TONS						
			Maize	Seed Cotton	Rice (Paddy)	Wheat	English Potatoes	Ground nuts	Tobacco
Port Herald	...	—	1,245	137	—	—	—	—	—
Chikwawa	...	—	2,837	93	—	—	—	—	—
Neno	...	393	259	18	300	—	10	—	151
Cholo	...	470	151	18	3	—	81	38	133
Mlanje	...	3,022	—	240	—	—	176	599	304
Blantyre	...	216	included in Neno	—	—	—	243	82	265
Chiradzulu	...	112		—	—	—	10	308	203
Zomba	...	—	—	147	—	—	1	64	15
Liwonde	...	350	80	75	—	—	607	183	116
Fort Johnston	...	262	50	—	—	—	169	72	61
Ncheu	...	525	5	—	242	152	47	346	1,200
Dedza	...	657	95	19	44	322	375	651	953
Fort Manning	...	200	—	—	—	—	27	808	6
Lilongwe	...	900	—	—	—	—	349	4,160	121
Dowa	...	110	8	—	—	—	83	1,179	81
Kota Kota	...	33	12	380	—	15	103	489	72
Kasungu	...	200	—	—	—	61	61	197	14
Mzimba	...	17	—	—	17	1	—	—	17
Chintechu	...	—	—	9	—	—	—	—	—
Karonga	...	—	419	442	—	—	—	—	3
TOTAL	...	7,467	5,161	1,578	606	551	2,342	9,176	3,715
1944	...	9,602	5,409	2,038	388	903	572	9,852	1,131

NOTE :—Maize is the staple foodstuff in most districts ; groundnuts, rice, wheat, beans and various other crops are also grown by natives for local consumption, but it is impossible to make an accurate estimate of the quantities of any of these crops. The figures for maize, rice, wheat, and groundnuts are amounts actually sold in districts, in produce markets and to Government agents.

The above tobacco and cotton figures represent the quantities purchased in each district and do not accurately reflect the production by districts, as many natives grow their tobacco and cotton in one district and sell in another.

NATIVE LIVESTOCK, 1945

DISTRICT					Cattle	Sheep	Goats	Pigs
Port Herald	...	...	...	...	660	2,684	8,531	7,394
Chikwawa	...	...	...	...	238	1,257	7,679	7,563
Neno	...	...	...	...	1,330	732	5,505	2,234
Cholo	...	...	...	...	110	1,150	2,910	2,777
Mlanje	...	...	...	...	2,562	4,980	14,252	10,032
Blantyre	...	...	...	...	2,048	1,821	9,663	5,631
Chiradzulu	...	...	...	...	2,820	1,010	7,891	7,728
Zomba	...	...	...	...	1,569	3,065	6,917	2,363
Liwonde	...	...	...	...	42	1,654	9,133	368
Fort Johnston	...	...	...	...	103	3,116	5,683	166
Ncheu	...	...	...	...	15,367	(1,378)	(19,901)	(1,404)
Dedza	...	...	...	...	26,139	(3,317)	(21,128)	(411)
Fort Manning	...	...	...	...	6,725	(1,348)	(5,360)	(1,691)
Lilongwe	...	...	...	...	51,927	?	?	?
Dowa	...	...	...	...	12,687	(5,200)	(31,500)	(2,100)
Kota Kota	...	...	...	...	1,875	(1,760)	(18,739)	(182)
Kasungu	...	...	...	...	2,620	(128)	(444)	(266)
Mzimba	...	...	...	...	37,220	878	4,914	353
Chintechu	...	...	...	...	2,100	(120)	(1,200)	?
Karonga	...	...	...	...	56,041	(420)	(1,442)	(106)
TOTAL	...	...	...	...	224,183	36,018	182,792	52,769
1944	...	...	...	...	232,357	36,414	181,361	47,032

Figures in brackets are as in last return for districts where no recent census has been taken.